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Strategic procurement and supply chain management and their impact on financial performance: Evidence from Sudanese enterprises

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ABSTRACT

This study examines how firms' financial performance changes when they adopt strategic procurement and supply chain management practices, with a focus on how the interaction between these capabilities improves organizational outcomes. A quantitative research design was used based on survey data from 311 professionals across various business sectors. Descriptive analysis, correlation tests, regression models, and logistic regression were applied to examine the relationships among strategic procurement, supply chain management, and financial performance, and reliability and validity tests were conducted to evaluate the measurement model. The results show that both strategic procurement and supply chain management have a significant positive effect on financial performance, and that supply chain management strengthens procurement practices, indicating a complementary relationship between the two. Although convergent validity was acceptable, some cross-loading inconsistencies suggest that the measurement model requires improvement. Overall, the findings indicate that integrating procurement and supply chain systems enhances both operational and financial performance; however, the use of self-reported and cross-sectional data limits causal interpretation, and measurement issues highlight the need for refinement. Future research should adopt longitudinal designs, cross-industry comparisons, and objective financial data. This study contributes to the literature by demonstrating how procurement and supply chain capabilities jointly improve financial performance and offers practical implications for organizations seeking to enhance profitability through strategic integration.

1. Introduction

Given the quick changes in the worldwide commercial enterprise landscape, strategic procurement and supply chain control have emerged as critical strategies for corporations looking for competitive gain and financial sustainability. Professional strategic procurement entails using sophisticated methodologies for provider selection, settlement control, and expenditure optimization, while supply chain control emphasizes the coordination of logistical processes and the flow of substances and information throughout production and distribution methods. Notwithstanding the growing importance of those two domain names, the literature, mainly inside the Sudanese context, continues to exhibit a research deficiency regarding the absence of studies correlating the degree of professionalism in those practices with the actual economic fulfillment of organizations (Kordab et al., 2020).

Strategic procurement and delivery chain management are steadily crucial in the present-day commercial enterprise landscape, functioning as crucial elements in enhancing corporate competitiveness and optimizing operational and monetary performance (Alnor, 2024a; Kohli and Malik, 2025). Mastering strategic procurement through effective purchasing tactics, technological integration, supplier evaluation, and coordination

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with other departments immediately facilitates cost reduction and complements exceptional performance (Althabatah et al., 2023). Conversely, supply chain control offers a comprehensive framework that guarantees the powerful movement of substances and information during procurement, stock, and logistics activities, thereby improving responsiveness and reducing waste. The literature indicates that both strategic procurement and supply chain control are fundamental additives in improving economic performance, whether through growing returns on property and investments, improving income margins, assisting revenue increase, or reducing operational fees (Alnor et al., 2024). Nonetheless, the relationship between those variables inside the context of Sudanese businesses stays concern for further examination, in light of the economic and environmental challenges confronting those organizations.

While many studies have investigated the impact of strategic buying and supply chain management (SCM) on improving organizational overall performance, most of this research has concentrated on developed economies or distinctly industrialized emerging markets, such as Sajja (2021). Previous research, like that by Tukamuhabwa et al. (2023), emphasized that professional procurement tactics and included delivery chains substantially enhance operational performance and competitive advantage. Similarly, research carried out by means of Jum'a et al. (2021) substantiates strong correlations between supply chain management techniques and financial performance.

Nonetheless, an awesome deficiency exists in the empirical records concerning the functioning of these practices in under-explored contexts like Sudan, wherein organizations come across structural, financial, and logistical obstacles that may modify or lessen those interactions. Most present-day studies emphasize operational or qualitative consequences, with less examination of the direct, quantifiable effect of strategic shopping professionalism and supply chain management integration on economic overall performance metrics (ROA, ROI, earnings margins) in African or Sudanese businesses. This has a look at fills in a completely essential gap by means of giving context-precise, quantitative evidence on how strategic buying professionalism and SCM practices influence the financial performance of Sudanese agencies. This is a place that does not have a variety of research on it. The purpose of this has a look at is to examine the influence of professionalizing strategic procurement and deliver chain control on Sudanese organizations' financial performance. This is accomplished through figuring out the level of adoption of these practices and evaluating their effect on profitability and operational efficiency metrics. This takes a look at additional pursuits to create an explanatory model to be able to resource in knowledge the relationship between variables and figuring out the components that enhance the efficacy of procurement and supply chain structures in terms of financial returns.

This takes a look at the contribution to investigating lies in addressing a significant information hole by way of providing empirical evidence within a growing context characterized by confined academic investigation. Additionally, it aims to expand an analytical framework that may be utilized by groups and decision-makers to enhance procurement policies and delivery chains, in the long run advancing economic performance and sustainability.

2. Literature review

According to a survey of relevant literature, theories of supply chain integration lay the groundwork for comprehending how strategic procurement and delivery chain management, when mastered, can boost the monetary overall performance of corporations in Sudan (Lowalan, 2024). To maximize responsiveness and avoid inefficiencies, these theories emphasize the significance of coordinating the flows of facts, resources, and processes throughout providers, inner departments, and customers. Companies can lessen operational expenses, increase productivity, and improve financial outcomes by implementing procurement and delivery chain management strategies (Lee, 2021). These sports include coordinated plans, provider collaboration, and real-time data sharing. According to these hypotheses, the capability to combine creates a competitive advantage that results in higher profits (Keskin et al., 2021).

2.1. Strategic procurement professionalism and financial performance

Strategic procurement professionalism elevates economic overall performance through augmenting the performance, effectiveness, and price contribution of the procurement branch (Al-Matari et al., 2024). When procurement is carried out professionally, employing systematic supplier evaluation, strategic sourcing, agreement management, and records-knowledgeable decision-making, organizations can markedly decrease each direct and indirect fee (Mojapelo, 2022). Professional procurement groups steadily advance pricing, optimize stock control, and domesticate enduring supplier relationships that improve supply consistency and mitigate operational risks. Moreover, procurement professionalism fosters quality enhancement and innovation through selecting high-performing suppliers; for this reason, minimizing transformation fees and improving services or products reliability. These upgrades cumulatively result in expanded profitability, better cash flow, and superior go back on funding.

Previous research has shown that powerful strategic procurement control enhances firm performance, such as Macharia and Osoro (2023). Effective structures and techniques in procurement ensured transparency and accountability, reduced

fees, and greater satisfaction and specifications. Twelve factors were recognized, with an emphasis on the statistics era and shared statistics and communications, in conjunction with 8 practices within the procurement manner, especially regarding dealer courting management and value reduction. These elements make contributions to the company's financial overall performance, broadly speaking, impacting earnings and return on investment (ROI) metrics. In light of the preceding dialogue on the correlation between strategic procurement control and economic performance, the authors suggest the subsequent hypothesis:

H1: A large correlation has been recognized between professionalism in strategic procurement and monetary performance.

2.2. Supply chain management and financial performance

A supply chain is the organization of organizations, human beings, movements, facts, and sources that work together to get a product from where it starts off, evolving to where it ends up being sold. It includes everything, like locating raw substances, buying them, making the product, maintaining a stock of supplies, transporting, storing, distributing, and presenting offerings after the sale. A well-run supply chain makes it smooth for suppliers, makers, logistics companies, and stores to collaborate and coordinate, which speeds up the go with the flow of goods and records. The delivery chain's last intention is to get the right product to the proper area, time, fee, and of high quality, in order that it meets the purchaser's wants (Akram et al., 2022).

Effective Supply Chain Management (SCM) boosts monetary performance via enhancing operational efficiency, lowering costs, and amplifying fee advent all through the delivery chain. Incorporating delivery chain control practices like call for forecasting, dealer coordination, stock optimization, and logistics management effectively reduces waste, minimizes lead times, and prevents stockouts or extra inventory. These upgrades efficiently lessen operational expenses and optimize asset usage. Moreover, powerful supply chain control facilitates set off shipping, maintains exceptional standards, and enhances client pleasure, all of which make contributions to extended income revenue and improved market competitiveness. Through the mitigation of risks associated with disruptions and the enhancement of delivery reliability, SCM contributes to the stabilization of coin flows and the development of profitability metrics, which include ROA, ROE, and internet margins (Alnor, 2024b).

Prior investigations suggest that the dynamics of supply chains exert a superb influence on the development of disruption and resilience. The resilience of supply chains is drastically shaped by the traits of disruptions. Nonetheless, the impact of disruption developments on economic overall performance is complex, as Yu et al. (2019) note. Previous research suggests that the implementation of supply chain control strategies has a direct fine effect on commercial enterprise overall performance. This improvement is carefully associated with abilities, including improvement of studies, advertising of generation, production potential, and advertising efforts. Consequently, integrating supply chain management techniques with organizational skills can result in usual sustainable enterprise performance for small and medium-sized companies (SMEs) such as Lee (2021). Considering the previous discussion concerning the relationship between Supply Chain Management and monetary performance, the authors suggest the following hypothesis:

H2: A great correlation has been recognized between Supply Chain Management and monetary performance.

2.3. Supply chain management as a mediator between strategic procurement professionalism and financial performance

Supply Chain Management serves as a vital link, changing the skills evolved through strategic procurement expertise into enhanced financial outcomes. Professionalism in strategic procurement enhances the assessment of providers, informs sourcing selections, improves settlement control, and increases transparency in buying. These practices enhance the mixing, coordination, and responsiveness of the supply chain, fundamental components of green delivery chain control (Liu et al., 2019). Improvements in supply chain management result in shorter lead times, decreased procurement and logistics prices, enhanced stock oversight, and extra reliability in delivery (Mohammed and Mandal, 2023). The upgrades in SCM function the channels through which procurement knowledge ultimately impacts financial results (Hallikas et al., 2021). Therefore, SCM acts as the operational hyperlink that integrates professional procurement practices with price performance, profitability, and financial performance.

Prior studies have proven that delivery chain success is correlated with strategic implementation elements, such as Lee (2021) and Lowalan (2024). And other prior investigations have emphasized that the dynamics of customer relationships, the combination of strategic suppliers, and the quantity of information change are essential for the long-lasting economic and economic achievement of small and medium-sized enterprises (SMEs). Following the earlier speech concerning the interplay among strategic procurement management, Supply Chain Management, and financial performance, the authors suggest the subsequent hypothesis:

H3: A sizeable correlation has been diagnosed between professionalism in strategic procurement

and supply chain control and universal financial performance.

The proposed theoretical framework illustrating the relationships among strategic procurement professionalism, supply chain management, and firms' financial performance is presented in Fig. 1.

3. Research methodology

The studies use the 5-fold Laker model and utilize ADANCO as a structural equation modeling method to analyze survey records and examine hypotheses via composite analyses (Hamza et al., 2024). The study's instrument changed into advanced, utilizing a five-factor Likert scale to methodically verify the elements being examined. The scale comprises five points indicating respondents' degree of settlement with the questionnaire gadgets: (1) Strongly disagree, (2) Disagree, (3) Neutral, (4) Agree, (5) Strongly agree (Mohamed et al., 2024). ADANCO was decided on as a modeling framework because of its ability to manage formative systems associated with the professionalization of strategic procurement and deliver chain control, as well as their influence on economic overall performance, rendering it suitable for research on this subject matter in developing economies (Jhantasana, 2023). According to Hazen et al. (2015) and Pacheco and Clausen (2024), the research approach complies with recognized norms of scientific rigor in SEM modeling for strategic procurement and supply chain management.

3.1. Study methodology

A survey of 311 personnel at Sudanese agencies was conducted from October to November 2025, employing online platforms and professional networks. Most members are employees with a sizable understanding of strategic procurement and supply chain control, as well as their results on monetary overall performance; accordingly, their insights are pertinent to the analysis of each commercial and industrial topic (Alharasis, 2025; Alnor et al., 2025).

3.2. Study population

The chosen participants in this study exemplify the country-wide economic system demographic of Sudan and, without delay, make contributions to the human capital improvement objectives as delineated by using Arabi and Abdalla (2013).

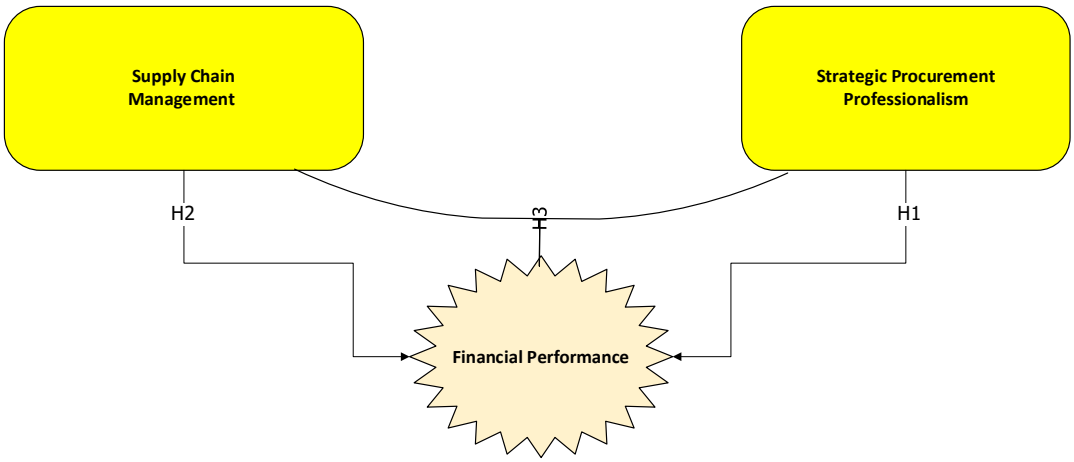

Fig. 1: Theoretical framework

The observer's target demographic comprised employees of Sudanese companies, making use of a sequential sampling method. This has a look at utilizing a sequential sampling method, in which pattern units were chosen in successive stages consistent with installed standards. The target populace became initially determined in accordance with the study's objectives. Subsequently, pattern elements have been incrementally integrated while information has become available and eligibility situations have been satisfied. The approach persisted until the vital pattern length was attained or statistical saturation was achieved. This approach enables adaptability and complements information greatly at the same time as mitigating prejudice related to incomplete records. Google Forms applied to offer a URL that allowed individuals to get admission to the distributed questionnaires. Given the characteristics of the goal population, the researchers at once disseminated the questionnaire hyperlink to Sudanese company employees through their email addresses and several social media websites, together with WhatsApp groups, Instagram, Snapchat, Facebook, and the X platform. The researchers right now tagged the Sudanese Standards and Metrology Organization's account and solicited its followers for assistance in data collection.

3.3. Tools and information sources

The preliminary five questions inside the survey collected player information, encompassing age, gender, educational qualifications, tenure, and organizational affiliation. The survey methodology applied consultant pattern strategies across various

industry ranges, providing a complete insight into the extent of strategic procurement and supply chain control professionalism and its effect on the financial performance of Sudanese organizations. An overall of 400 questionnaires were disseminated, with 311 returned, yielding a response rate of 77.75%.

3.4. Measurement of the variables

This has a look at ADANCO's composite-based SEM evaluation as opposed to covariate-based SEM (CB-SEM) for numerous methodological motives. ADANCO is famous for evaluating strategic procurement and delivering chain control understanding in growing economies, facilitating each predictive and fashion analysis in this domain (Jhantasana, 2023). ADANCO affords assistance for formative systems through the usage of composite modeling, because the amalgamation of strategic procurement, supply chain management, and monetary overall performance necessitates methodologies that surpass the conjectural modeling of CBSEM (Hair et al., 2021; Jhantasana, 2023). ADANCO provides a powerful evaluation for smaller datasets, particularly for Sudanese business personnel. CB-SEM needs higher sample sizes, consistent with Amoah et al. (2021). The studies investigate age, schooling, and paintings as mediating variables due to their compatibility with ADANCO's sophisticated multi-degree communication modeling functionalities (Alruwaili and Mgammal, 2025).

3.5. Survey data analysis

Table 1 gives a demographic profile of a large cohort of 311 individuals. The sample consists mainly of males (72%), while females account for 28%. Most respondents are inside the effective center-age demographic, with 40% elderly 41–50 and 26% elderly 51–60, while the ones below 30 years represent 24%. Regarding schooling, 50% of the individuals possess a postgraduate diploma, followed by way of 20% with diplomas and 16% with bachelor's levels, suggesting a predominantly well-qualified organization. Professional qualifications are sturdy, with 50% protecting an American Fellowship and 21% possessing a British Fellowship, indicating elevated expert competency. In terms of specialization, business management constitutes 36%, accounting contains 34%, and banking sciences constitute 21%. Participants own substantial experience, with 31% exceeding twenty years, 14% in both the 11–15 and 16–20 years brackets, and 30% having less than 5 years of experience. The sample represents an exceptionally educated and professionally skilled group of workers.

Table 1: Frequencies and percentages of participant profiles

Section	Variable	Category	Frequency	Percentage
Panel: A	Gender	Male	224	72%
		Female	87	28%
		Total	311	100%
Panel: B	Age	30 – 40	27	9%
		41 – 50	124	40%
		51 – 60	80	26%
		Less than 30	74	24%
		Above 60	6	2%
		Total	311	100%
Panel: C	Education level	Bachelor	51	16%
		Postgraduate diploma	155	50%
		Diploma	62	20%
		Master	31	10%
		PhD	12	4%
		Total	311	100%
Panel: D	Professional qualification	Nothing	38	12%
		Other	21	7%
		Arab fellowship	32	10%
		American fellowship	154	50%
		British fellowship	66	21%
		Total	311	100%
Panel: E	Specialization	Accounting	105	34%
		Banking sciences	65	21%
		Information technology	6	2%
		Business administration	111	36%
		Other	24	8%
		Total	311	100%
Panel: G	Years of experience	Above 20	95	31%
		5-10	37	12%
		11-15	43	14%
		Less than 5	93	30%
		16-20	43	14%
		Total	311	100%

Table 2 affords descriptive data, offering an outline of participant characteristics and essential observation elements. The demographic variables show off good-sized variability, with suggested values indicating that most respondents are distinctly young, own intermediate training, and have diverse tiers of experience. All additives of strategic procurement rating above the midpoint of 3, reflecting predominantly favorable perceptions. The suggestion for dealer selection and evaluation is

the very best at 4.27, indicating strong talent in choosing and analyzing providers. In assessment, procurement method efficiency and technology use show off excessive means of approximately 3.70, implying constant but improvable overall performance. Supply chain control indicators display tremendous critiques, with inventory control and logistics attaining ratings past 3.60, however facts integration is marginally decreased at 3.60, suggesting the capability for advanced coordination during the delivery chain. Financial performance indicators showcase comparably favorable developments, with running expenses and revenue growth showing the very best averages, indicating enhancements in operational performance and economic consequences. The effects indicate sturdy procurement and delivery chain strategies together with incredible economic performance.

Table 2: Descriptive

Construct	Measurement items	Abbreviation	Mean	Std. deviation	Min	Max
Participant profiles	Gender	Gender	1.7336	0.6635	1	2
	Age	Age	2.1396	1.1893	1	5
	Education level	Education	2.1683	1.7624	1	5
	Years of experience	Experience	2.3762	1.3443	1	5
Mastering strategic procurement	Procurement process efficiency	MSP1	3.7016	0.7404	1	5
	Strategic procurement planning	MSP2	3.7962	0.9247	1	5
	Supplier selection and evaluation	MSP3	4.2674	0.8609	2	5
	Integration between procurement and other departments	MSP4	3.6832	0.8679	1	5
	Using technology in procurement	MSP5	3.7404	0.8392	1	5
Supply chain management	Supply chain and supplier management	SCM1	3.6574	0.9425	1	5
	Inventory management	SCM2	3.7191	0.9306	1	5
	Logistics and transportation	SCM3	3.6923	0.8274	1	5
	Information integration across the supply chain	SCM4	3.5990	0.9390	2	5
	Speed of response and quality of workflow	SCM5	3.6273	0.8274	2	5
Financial performance	Return on Assets (ROA)	FFP1	3.6923	0.9359	1	5
	Return on Investment (ROI)	FFP2	3.5973	0.9538	1	5
	Profit Margin	FFP3	3.6922	0.8688	1	5
	Revenue Growth	FFP4	3.8769	1.0055	2	5
	Operating Costs	FFP5	3.9692	1.0163	1	5

Table 3 provides the Average Variance Extracted (AVE) and Composite Reliability (CR) for the research constructs, demonstrating good enough convergent validity and internal consistency. All AVE values surpass the recommended threshold of 0.50, indicating that each construct accounts for over 0.5 of the variance of its signs (Haji-Othman and Yusuff, 2022). Furthermore, CR values span from 0.772 to 0.874, exceeding the minimal allowed threshold of 0.70. The findings validate that the measuring scales for strategic procurement mastery, supply chain control, and corporate economic performance are each dependable and valid for future structural version studies.

Table 3: Average variance extracted (AVE) and composite reliability (CR)

Construct	Abbreviation	AVE	CR
Mastering strategic procurement	MSP	0.57	0.772
Supply chain management	SCM	0.67	0.874
Firms' financial performance	FFP	0.66	0.870

Table 4 shows the rectangular root of the Average Variance Extracted (AVE) along with the inter-construct correlation matrix to evaluate discriminant validity in line with the Fornell–Larcker criterion. The square roots of the AVE values for MSP (0.33), SCM (0.45), and FFP (0.45) are juxtaposed with the correlations among constructs. Although MSP exhibits a low correlation with SCM (0.209), the correlation between MSP and FFP (0.673) surpasses the square root of AVE for MSP, suggesting a probable deficiency in discriminant validity between these two domains. The correlation between SCM and FFP (0.387) is about the same as the mentioned square root of AVE. The results indicate a partial overlap among constructs, mainly between strategic procurement mastery and businesses' monetary performance, which warrants careful attention in decoding the structural linkages.

Table 4: Square root of AVE

Construct	Square root of AVE		
MSP	0.33		
SCM	0.45		
FFP	0.45		
Inter-construct correlation matrix			
	MSP	SCM	FFP
MSP	1.000	0.209	0.673
SCM	0.209	1.000	0.387
FFP	0.673	0.387	1.000

The move-loadings in Table 5 suggest that most gadgets do not now show off full-size institutions with their detailed constructions, suggesting insufficient discriminant validity amongst MSP, SCM, and FFP. Ideally, every item needs to have the very best loading on its respective latent variable; nevertheless, the found values are predominantly low and frequently show greater loadings on undesired constructs. For example, MSP3 and MSP4 exhibit extra loading on FFP as compared to MSP, although several SCM and FFP products show similarly erratic patterns. This shows overlapping size consequences and viable construct misspecification. The results indicate that the version necessitates change, more advantageous object alignment, or reevaluation of the foundational element structure.

The consequences of the correlation evaluation between the look at constructs and the demographic elements are proven in Table 6. There are special degree institutions shown with the aid of correlations. Some factors have susceptible relationships, while others have more potent

hyperlinks. Notably, there may be a pretty sturdy positive correlation between age and experience, which means that those older individuals are likely to have greater painting experience. A range of items inside the strategic procurement, supply chain management, and financial performance constructs have slight to excessive inter-item correlations. This approach is that there is inner consistency within each construct. On the other hand, there aren't many links among demographic variables and construct items. In this way, gender, age, faculty degree, and enjoyment don't have a large impact on the primary look at measures. Overall, Table 6 suggests a clean correlation shape that helps the dataset's dependability.

Table 5: Cross-loadings

Item	MSP	SCM	FFP
MSP1	0.109	-0.082	0.027
MSP2	0.345	-0.339	-0.242
MSP3	-0.219	0.178	0.330
MSP4	-0.221	0.130	0.403
MSP5	-0.333	0.346	-0.179
SCM1	-0.256	-0.053	-0.282
SCM2	-0.249	-0.003	-0.253
SCM3	-0.260	-0.050	-0.256
SCM4	-0.253	-0.032	-0.264
SCM5	-0.144	-0.274	0.105
FFP1	-0.137	-0.287	0.062
FFP2	-0.116	-0.208	0.258
FFP3	-0.239	-0.250	-0.013
FFP4	-0.186	-0.356	0.205
FFP5	-0.157	-0.283	-0.017

Table 6: Correlation analysis

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	1.000																		
2	0.276	1.000																	
3	-0.071	0.080	1.000																
4	-0.373	0.604	0.133	1.000															
5	-0.356	0.711	0.044	0.560	1.000														
6	-0.240	0.267	-0.027	0.373	0.373	1.000													
7	-0.089	0.053	0.836	0.018	0.036	0.071	1.000												
8	-0.098	0.009	0.436	0.000	-0.071	0.240	0.471	1.000											
9	-0.018	-0.018	-0.213	0.027	0.036	0.089	-0.240	0.427	1.000										
10	-0.116	-0.027	-0.160	0.000	-0.009	0.098	-0.178	-0.400	0.631	1.000									
11	0.000	0.204	0.027	-0.116	0.107	0.080	0.622	0.444	0.320	0.249	1.000								
12	-0.071	0.080	-0.036	0.107	0.027	0.204	-0.124	-0.133	0.044	0.009	0.169	1.000							
13	-0.107	0.098	0.169	0.098	0.036	0.178	0.231	0.187	0.142	0.178	0.276	0.302	1.000						
14	-0.062	-0.187	-0.222	-0.089	-0.116	0.124	0.249	0.276	0.213	0.204	0.338	0.338	0.373	1.000					
15	-0.036	0.133	0.356	-0.080	-0.107	0.036	0.311	0.329	0.213	0.213	0.427	0.329	0.320	0.613	1.000				
16	-0.027	0.080	0.249	0.018	-0.044	0.062	0.302	0.302	0.231	0.240	0.356	0.293	0.373	0.684	0.649	1.000			
17	-0.044	0.062	0.284	0.009	0.000	0.160	0.302	0.293	0.276	0.187	0.338	0.213	0.258	0.640	0.667	0.702	1.000		
18	-0.062	0.107	-0.142	0.071	0.000	0.124	-0.151	-0.160	0.142	0.187	0.053	0.196	0.498	0.213	0.213	0.258	0.204	1.000	
19	-0.098	-0.036	-0.089	0.027	-0.044	0.107	-0.151	-0.071	0.089	0.124	0.044	0.089	0.373	0.302	0.249	0.320	0.320	0.418	1.000

1: Gender; 2: Age; 3: Education; 4: Experience; 5: MSP1; 6: MSP2; 7: MSP3; 8: MSP4; 9: MSP5; 10: SCM1; 11: SCM2; 12: SCM3; 13: SCM4; 14: SCM5; 15: FFP1; 16: FFP2; 17: FFP3; 18: FFP4; 19: FFP5

Table 7 presents the regression model effects, indicating sizable direct and moderating influences on firms' financial overall performance (FFP). Mastering strategic procurement (MSP) demonstrates a wonderful and statistically huge impact on FFP (β = 0.2000, p < 0.001), accounting for 43.12% of the variance. Likewise, deliver chain control (SCM) exerts a tremendous positive impact on FFP (β = 0.0970, p < 0.001), with an R^2 of 0.4206, signifying moderate explanatory potential. The interplay effect among SCM and MSP is high-quality and good-sized (β = 0.2279, p = 0.001), resulting in an increase in defined variance to 48.19%. The self-belief intervals for all hypotheses exclude 0, declaring the robustness of the results and underscoring the reinforcing function of SCM in augmenting the influence of MSP on economic performance.

Table 7: Regression model results

	hypothesis	Coefficient	R^2	95% CI	P-value	Interpretation
H1	MSP -> FFP	0.2000	0.4312	0.11, 0.27	0.000	MSP significantly impacts FFP
H2	SCM -> FFP	0.0970	0.4206	0.4, 0.14	0.000	SCM significantly impacts FFP
H3	SCM x MSP -> FFP	0.2279	0.4819	0.13, 0.31	0.001	SCM increases MSP impacts of FFP

3.6. Logistic regression analysis

The summary of the logistic regression version in Table 8 provides evidence that supports the observer's assumptions. The Chi-square value of 0.6149 and the RMSEA cost of 0.00 for H1 display that the version fits very well; the barely terrible CFI value says that it doesn't get a whole lot better than the baseline model. With a Chi-square of 0.4093, an effective CFI of 0.2951, and an RMSEA of 0.00, H2 additionally suits properly, showing that the model structure may be very solid. Also, H3 has a Chi-square price of 0.4818, a CFI fee of 0.1783, and an RMSEA price of 0.00, which suggests that the connection between supply chain management and Strategic Procurement Professionalism fits nicely with the statistics that were amassed. Overall, the logistic regression fit indicates that everyone 3 models fit nicely and describe the proposed relationships. This makes the findings even more stable.

4. Discussion

This observation shows that gaining knowledge of strategic procurement (MSP) and powerful supply chain control (SCM) is critical for improving the financial success of groups. The descriptive results show that the respondents had a lot of understanding and were properly qualified, which makes the insights given more reliable. Most of the strategic procurement and supply chain indicators got above the center factor, which suggests that businesses assume their procurement and delivery chain practices are running properly. However, there may nevertheless be room for improvement in

regions like integrating facts. The effects of the validity look at delivering a combined image. At first, the AVE and composite reliability values confirmed correct convergent validity and inner consistency. However, cross-loadings that do not match up and unusually high AVE scores point to viable measurement problems. These effects indicate that a few objects won't strongly match with the ideas they were intended to convey, which means that the measurement model needs to be stepped forward even further.

Even though those measurements have a few flaws, the regression results make it clear how essential procurement and delivery techniques are. The MSP has a sturdy and statistically widespread impact on economic achievement. This proves that true planning for purchases, selecting the right providers, and making methods more efficient all result in better financial effects. SCM has a good effect as well, displaying how essential it is to control inventory, coordinate workflow, and use logistics to make cash. Notably, the interaction term indicates that SCM makes MSP's effect on monetary overall performance stronger. This method shows that buying efforts work higher whilst they're mixed with wider delivery chain abilities.

Table 8: Logistic regression model summary

	Hypothesis	Chi-square (χ^2)	Comparative fit index (CFI)	Root mean square error of approximation (RMSEA)
H1	MSP -> FFP	0.6149	-0.0363	0.00
H2	SCM -> FFP	0.4093	0.2951	0.00
H3	SCM x MSP -> FFP	0.4818	0.1783	0.00

All 3 hypotheses fit properly with the logistic regression model, which provides the power of these findings. The barely negative CFI for H1 is a motive to be careful, but the constantly low RMSEA values show that the model is powerful for all relationships that have been examined.

Overall, the results show that strategic buying and supply chain management are abilities that work together to make organizations a good deal more worthwhile. This result is consistent with previous studies such as Chen et al. (2004), Li et al. (2006), and Yeung (2008). The results show how important it is to consider buying sports in larger supply chain structures on the way to getting excellent results in terms of practical efficiency and money. To make the outcomes more dependable and growth assemble validity of the growth model, future studies ought to make the measurement scales higher and consider the usage of more advanced structural equation modeling strategies.

5. Conclusion

The aim of this study is to find out how companies' overall financial performance adjusts after they grasp strategic procurement and supply chain control. The results show that each of those areas is very important to the fulfillment of an agency. The descriptive effects showed that the interviewees have quite a few professional credentials, which makes the records accrued more reliable. Indicators for strategic shopping and the supply chain showed mostly tremendous perspectives, which show that businesses realize and value those operational talents. The research indicated that effective strategic procurement control and supply chain control improve company performance, corroborating other findings of other studies, such as Macharia and Osoro (2023).

Empirical studies showed that these practices are highly important. The regression results indicated that both strategic procurement and supply chain management have a positive, significant, and statistically strong effect on an organization's financial performance. In addition, their combined effect suggests that supply chain management increases the effectiveness of strategic procurement. This highlights the importance of integrating procurement activities into broader supply chain strategies. The logistic regression results also supported these relationships, providing additional evidence for the suitability of the proposed model.

Some measurement errors were identified during the validity testing process, particularly in the cross-loadings. However, the overall findings strongly support the proposed theoretical relationships. The study concludes that organizations that invest in effective procurement planning, supplier evaluation, operational management, and information sharing are more likely to achieve better financial performance. Therefore, aligning procurement and supply chain practices is essential for improving organizational performance. These findings provide valuable insights for managers, policymakers, and researchers seeking to enhance financial performance through strategic operational practices.

6. Implication of the study

This study contributes to the growing body of research on procurement and supply chain management by demonstrating that strategic procurement, supply chain practices, and financial performance are positively related. The significant interaction effect indicates that procurement and supply chain functions are not independent concepts; rather, they are complementary capabilities that work together to improve organizational performance. These findings support and extend resource-based and capability integration theories by emphasizing that operational alignment enhances organizational success.

From a practical perspective, the findings highlight the importance of developing strong procurement systems that include effective supplier selection, efficient processes, and the use of modern technologies. At the same time, organizations should strengthen supply chain capabilities such as

inventory management, information integration, and logistics improvement. When organizations closely align procurement activities with supply chain processes, they can increase profitability, reduce costs, and improve overall financial performance. To maximize operational efficiency, organizations should prioritize employee training, technological innovation, and cross-departmental collaboration.

The findings also have important policy implications. Business leaders and professional organizations should encourage standardized approaches to procurement and supplier management. Promoting the adoption of advanced procurement frameworks, digital supply chain technologies, and professional certification programs can improve organizational performance across different sectors. Policymakers can further support initiatives that enhance the skills and capabilities of employees in Sudanese businesses. Such efforts can contribute to stronger organizational performance and greater national economic development.

7. Limitations of the study and future suggestions and recommendations

This study has several limitations that should be considered when interpreting the findings. First, the data were collected through self-reported survey responses, which may introduce bias because they rely on participants' opinions rather than objective measures of performance. Second, the study used cross-sectional data, which limits the ability to establish causal relationships between procurement practices, supply chain management, and financial performance. Third, some measurement issues were identified during the validity testing process, particularly in the cross-loading results, suggesting that certain items may not have fully captured the intended constructs. Fourth, the sample was limited to a specific group of respondents, which may reduce the generalizability of the findings to other industries or regions. Finally, the very high Average Variance Extracted (AVE) values suggest that the measurement instruments may require further refinement, as they may remove too much variance.

Future research should use longitudinal data to better examine how procurement and supply chain practices evolve over time and to strengthen causal interpretations. The measurement model should also be improved by reviewing items with weak or inconsistent loadings and revising or replacing them where necessary. The findings could become more generalizable if future studies include larger samples across different industries, regions, and international organizations. In addition, incorporating objective indicators of financial performance, such as audited financial statements, would improve measurement accuracy. Advanced analytical methods, including Structural Equation Modeling (SEM) and predictive models based on machine learning, may also provide deeper insights into the relationships among procurement, supply chain management, and financial performance.

To improve financial performance, organizations should better align procurement and supply chain activities. Investment in technology-based procurement systems and integrated supply chain information systems can improve operational efficiency. Continuous training and professional certification programs should also be implemented to strengthen employees' skills, particularly in strategic procurement and logistics management. Organizations should prioritize supplier evaluation and partnership management to ensure consistent operational quality and reduce risks. The use of data-driven decision-making tools can further support the monitoring and improvement of procurement and supply chain performance. In addition, industries should be encouraged to adopt standardized procurement models and best practices in supply chain management. Supporting professional development programs, such as fellowships and certifications, is essential for developing a skilled workforce. Finally, government policies and incentives should promote digital transformation initiatives within the procurement and supply chain sectors.

List of abbreviations

ADANCO	Advanced analysis of composites
AVE	Average variance extracted
CB-SEM	Covariance-based structural equation modeling
CFI	Comparative fit index
CI	Confidence interval
CR	Composite reliability
DEA	Data envelopment analysis
FFP	Firms' financial performance
FFP1	Return on assets
FFP2	Return on investment
FFP3	Profit margin
FFP4	Revenue growth
FFP5	Operating costs
H1	Hypothesis 1
H2	Hypothesis 2
H3	Hypothesis 3
MSP	Mastering strategic procurement
MSP1	Procurement process efficiency
MSP2	Strategic procurement planning
MSP3	Supplier selection and evaluation
MSP4	Integration between procurement and other departments
MSP5	Using technology in procurement
RMSEA	Root mean square error of approximation
ROA	Return on assets
ROE	Return on equity
ROI	Return on investment
SCM	Supply chain management
SCM1	Supply chain and supplier management
SCM2	Inventory management
SCM3	Logistics and transportation
SCM4	Information integration across the supply chain
SCM5	Speed of response and quality of workflow
SEM	Structural equation modeling
SMEs	Small and medium-sized enterprises

Std.	Standard
X	X platform (formerly Twitter)
β	Beta coefficient
χ^2	Chi-square

Compliance with ethical standards

Ethical considerations

Participation in this study was voluntary, informed consent was obtained from all participants, and responses were collected anonymously and used solely for academic purposes.

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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